

SPECIFICATION

- Supplier : Samsung electro-mechanics
- Product : Multi-layer Ceramic Capacitor

- Samsung P/N : **CL21F106ZQFNNNF**
- Description : **CAP,10 μ F, -20+80%, 6.3V, Y5V, 0805**

A. Samsung Part Number

CL **21** **F** **106** **Z** **Q** **F** **N** **N** **N** **F**
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

① Series	Samsung Multi-layer Ceramic Capacitor				
② Size	0805 (inch code)	L: 2.0 ± 0.1 mm	W: 1.25 ± 0.1 mm		
③ Dielectric	Y5V	⑧ Inner electrode	Ni		
④ Capacitance	10 μF	Termination	Cu		
⑤ Capacitance tolerance	-20/+80 %	Plating	Sn 100% (Pb Free)		
⑥ Rated Voltage	6.3 V	⑨ Product	Normal		
⑦ Thickness	1.25 ± 0.1 mm	⑩ Special	Reserved for future use		
		⑪ Packaging	Embossed Type, 13" reel		

B. Samsung Reliability Test and Judgement condition

	Performance	Test condition
Capacitance	Within specified tolerance	1kHz $\pm$ 10% 1.0 $\pm$ 0.2Vrms
Tan δ (DF)	0.16 max.	
Insulation Resistance	10,000Mohm or 100Mohm $\cdot\mu$ F Whichever is Smaller	Rated Voltage 60~120 sec.
Appearance	No abnormal exterior appearance	Microscope ($\times$ 10)
Withstanding Voltage	No dielectric breakdown or mechanical breakdown	250% of the rated voltage
Temperature Characterisitcs	Y5V (From -30 $^{\circ}$ C to 85 $^{\circ}$ C, Capacitance change should be within -82~+22%)	
Adhesive Strength of Termination	No peeling shall be occur on the terminal electrode	500g $\cdot$ F, for 10 $\pm$ 1 sec.
Bending Strength	Capacitance change : within $\pm$ 30%	Bending to the limit (1mm) with 1.0mm/sec.
Solderability	More than 75% of terminal surface is to be soldered newly	SnAg3.0Cu0.5 solder 245 $\pm$ 5 $^{\circ}$ C, 3 $\pm$ 0.3sec. (preheating : 80~120 $^{\circ}$ C for 10~30sec.)
Resistance to Soldering heat	Capacitance change : within $\pm$ 20% Tan δ , IR : initial spec.	Solder pot : 270 $\pm$ 5 $^{\circ}$ C, 10 $\pm$ 1sec.

	Performance	Test condition
Vibration Test	Capacitance change : within $\pm 20\%$ Tan δ , IR : initial spec.	Amplitude : 1.5mm From 10Hz to 55Hz (return : 1min.) 2hours $\times$ 3 direction (x, y, z)
Moisture Resistance	Capacitance change : within $\pm 30\%$ Tan δ : 0.195 max IR : 12.5M $\Omega \cdot \mu F$ or Over	With rated voltage 40 $\pm 2^\circ C$, 90~95%RH, 500+12/-0hrs
High Temperature Resistance	Capacitance change : within $\pm 30\%$ Tan δ : 0.195 max IR : 25M $\Omega \cdot \mu F$ or Over	With 150% of the rated voltage Max. operating temperature 1000+48/-0hrs
Temperature Cycling	Capacitance change : within $\pm 20\%$ Tan δ , IR : initial spec.	1 cycle condition Min. operating temperature $\rightarrow 25^\circ C$ $\rightarrow$ Max. operating temperature $\rightarrow 25^\circ C$ 5 cycle test

C. Recommended Soldering method :

Reflow (Reflow Peak Temperature : 260+0/-5 $^\circ C$, 10sec. Max)

* For the more detail Specification, Please refer to the Samsung MLCC catalogue.